

REMARKS

The Office Action dated April 17, 2008, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-4 and 7-11 are currently pending, of which claims 1 and 7-8 are independent claims. Claims 5-6 and 12-13 were previously cancelled without prejudice or disclaimer.

Applicant thanks the Examiner for indicating that claims 4 and 11 contain allowable subject matter. As discussed below, Applicant respectfully submits that the Office Action failed to establish a *prima facie* case of obviousness regarding the rejections of claims 1-3 and 7-10 under 35 U.S.C. §103(a) based on the teachings of Min, Cowley, and Vinn. Claims 4 and 11 depend from claims 1 and 8, respectively. Accordingly, claims 4 and 11 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein. Accordingly, Applicant respectfully requests withdrawal of the objections of claims 4 and 11 and respectfully submits that claims 1 and 8, and the claims that depend therefrom, are in condition for allowance.

In view of the following remarks, Applicant respectfully requests reconsideration and timely withdrawal of the pending claim objections and rejections for the reasons discussed below.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1 and 7- 8

The Office Action rejected claims 1 and 7-8 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Min (U.S. Patent Publication No. 2003/0016761) (“Min”) in view of Cowley (U.S. Patent Publication No. 2003/0017817) (“Cowley”). Applicant respectfully submits that the claims recite subject matter that is neither disclosed nor suggested in the combination of Min and Cowley.

Claim 1, upon which claims 2-4 depend, recites a method. The method includes filtering a signal with a bandpass filter, measuring image rejection and DC offset rejection of the filtered signal, and adjusting a center frequency of the bandpass filter. The filtering, measuring and adjusting is repeated until a compromise between DC offset rejection and image rejection is achieved. The compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements.

Claim 7 recites a system. The system includes means for filtering a signal, means for measuring image rejection and DC offset rejection of the filtered signal, and means for adjusting a center frequency of the means for filtering. The filtering, measuring and adjusting is repeated until a compromise between DC offset rejection and image rejection is achieved. The compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements.

Claim 8, upon which claims 9-11 depend, recites a system. The system includes bandpass filter capable of filtering a received signal and capable of having a center frequency adjusted, and at least one measurement circuit, communicatively coupled to the filter, capable of measuring image rejection and DC offset rejection of the filtered signal. The bandpass filter and at least one measurement circuit continue to filter, measure and adjust the center frequency until a compromise between DC offset rejection and image rejection is achieved. The compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements.

As will be discussed below, the combination of Min and Cowley would fail to disclose or suggest every feature recited in claims 1 and 7-8, and therefore fails to provide the advantages and the features of the claims discussed above.

Min is directed to a method and apparatus for controlling a digital filter of a radio transmitter. Min discloses an analog/digital converter for converting an analog signal to a digital signal, a data processing unit for compressing and error-correcting the digital signal, a code for coding the signal provided by the data processing unit to an I signal and a Q signal. Min also discloses a digital filter for wave-filtering the I and Q signals, a modulator for modulating the I and Q signals into an intermediate frequency (IF) signal, and a mixer for up-converting the IF signal into a radio frequency. Min also discloses a bandpass filter (BPF) for filtering the up-converted radio signal, an amplifier for

amplifying the filtered radio frequency signal, and a filter control means for controlling a roll-off factor of the digital filter (Min, Abstract; paragraphs [0014]-[0018]).

Cowley is directed to a tuner. Cowley discloses a tuner including a frequency changer which converts an input signal to a predetermined fixed intermediate frequency. The frequency changer is followed by an IF filter having a filter parameter, such as a center frequency, which is electronically adjustable. A controller adjusts the adjustable filter characteristic so as to achieve a predetermined desired filtering performance, such as ensuring that the filter center frequency corresponds to the desired intermediate frequency. The controller includes a local oscillator having the same type of tuned circuit as the IF filter. A phase locked loop compares the local oscillator frequency with a reference frequency and controls the tuned circuits of the IF filter and the local oscillator (Cowley, Abstract, paragraphs [0012]-[0018]).

Applicant respectfully submits that the Office Action failed to establish a *prima facie* case of obviousness regarding the rejections of claims 1 and 7-8 under 35 U.S.C. §103(a) based on the teachings of Min and Cowley.

Assuming *arguendo* that the teachings of Min could be combined with the teachings of Cowley, the combination of Min and Cowley would fail to disclose or suggest every feature recited in claim 1, and similarly recited in claims 7 and 8. Specifically, the combination of Min and Cowley would fail to disclose or suggest, “measuring image rejection and DC offset rejection of the filtered signal; and adjusting a center frequency of the bandpass filter, wherein the filtering, measuring and adjusting is

repeated until a compromise between DC offset rejection and image rejection is achieved, and wherein the compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements” as recited in claim 1, and similarly recited in claims 7 and 8 (emphasis added).

The Office Action alleged that Min discloses the aforementioned features recited in claim 1, and similarly recited in claims 7 and 8, citing paragraphs [0033] and [0036-0042] (See Office Action on pages 2-3). However, a review of these passages demonstrates that Min fails to disclose the aforementioned claim features.

Rather, Min merely discloses a digital filter control unit 100 which measures system parameters such as the signals provided by amplifier 85, the I phase and Q phase signals filtered by the digital filter 45, and a frame error rate (FER) provided by a receiving terminal. Based on these parameters, the digital filter control unit 100 controls the digital filter 45 by way of a control signal (Min, paragraph [0032]).

Min further discloses that the digital filter control unit 100 includes a power detector 110 for measuring the I phase and the Q phase output signals and the signal provided by the amplifier 85 to calculate a power peak value. The power detector 110 may include a Schottky diode and an LC filter. A roll-off factor analyzer 130 determines whether or not the amplified signal is distorted depending on whether the power peak is in a linear region or in a saturation region and provides a roll-off factor control signal to the roll-off factor adjuster 120. The roll-off factor analyzer 130 also measures a

receiving terminal's FER and uses it to control the roll-off factor of the digital filter 45 (Min, paragraphs [0033] and [0036]-[0037]).

Hence, Min merely discloses measuring orthogonal signal components, *the I phase and the Q phase signals*, received from the digital filter 45, and a signal provided by the amplifier 85, to calculate a power peak value. The power peak value is used to determine whether the amplified signal is distorted depending on whether the power peak is in a linear region or in a saturation region. Min also merely discloses measuring a receiving terminal's FER to control the digital filter 45. From these measurements, the digital filter control unit 100 controls the digital filter 45.

Accordingly, Min makes no mention of “measuring image rejection and DC offset rejection of the filtered signal” as recited in claim 1, and similarly recited in claims 7 and 8 (emphasis added). Therefore, Min further also makes no mention of “wherein the filtering, measuring and adjusting is repeated until a compromise between DC offset rejection and image rejection is achieved, and wherein the compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements” as recited in claim 1, and similarly recited in claims 7 and 8 (emphasis added).

Cowley fails to cure the deficiencies of Min. Accordingly, the combination of Min and Cowley would fail to disclose or suggest every feature recited in claim 1, and similarly recited in claims 7 and 8.

Therefore, Applicant respectfully requests withdrawal of the rejections of claims 1 and 7-8 under 35 U.S.C. §103(a) and respectfully submits that claims 1 and 7-8, and the claims that depend therefrom, are in condition for allowance.

Claims 2, 3, 9, and 10

The Office Action rejected claims 2-3 and 9-10 under 35 U.S.C. §103(a) as being allegedly unpatentable as obvious over Min, *et al.* (U.S. Patent No. 7,171,185) (“Min”) in view of Cowley (U.S. Patent No. 7,120,416) (“Cowley”), and further in view of Vinn, *et al.* (U.S. Patent No. 6,441,682) (“Vinn”). Applicant respectfully submits that the claims recite subject matter that is neither disclosed nor suggested in the combination of Min, Cowley, and Vinn.

Min and Cowley were discussed above. Vinn is directed to an improved implementation of an active-RC polyphase band-pass filter with a transconductor cross-coupling between filter sections for use in active polyphase filter design (Vinn, Abstract; col. 7, line 38, to col. 8, line 55).

As previously noted, the combination of Min and Cowley would fail to disclose or suggest every feature recited in claims 1 and 7-8. Vinn fails to cure the deficiencies of Min and Cowley. Specifically, Vinn fails to disclose or suggest, at least “measuring image rejection and DC offset rejection of the filtered signal; and adjusting a center frequency of the bandpass filter, wherein the filtering, measuring and adjusting is repeated until a compromise between DC offset rejection and image rejection is achieved,

and wherein the compromise is reached when the DC offset rejection is within acceptable tolerances and image rejection meets minimum pre-specified requirements” as recited in claim 1, and similarly recited in claims 7 and 8 (emphasis added).

Accordingly, the combination of Min, Cowley, and Vinn would fail to disclose or suggest every feature recited in claims 1 and 7-8.

Claims 2-4 depend from claim 1. Claims 9-11 depend from claim 8. Accordingly, claims 2-3 and 9-10 should be allowable for at least their dependency upon an allowable base claim, and for the specific limitations recited therein.

Therefore, Applicant respectfully requests withdrawal of the rejections of claims 2-3 and 9-10 under 35 U.S.C. §103(a), and respectfully submits that claims 1 and 7-8, and the claims that depend therefrom, are in condition for allowance.

CONCLUSION

In conclusion, Applicant respectfully submits that Min, Cowley, and Vinn, alone or in combination, fail to disclose or suggest every feature recited in claims 1-4 and 7-11. The distinctions previously noted are more than sufficient to render the claimed invention non-obvious. It is therefore respectfully requested that all of claims 1-4 and 7-11 be allowed, and this present application be passed to issuance.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, Applicant's undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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